## CLAIMS

We claim:

1. A vaterite calcium carbonate having a primary particle size of about 0.2 μm to about 3 μm and an aggregate particle size of less than about 4 μm.

2. The calcium carbonate according to claim 1, having a primary particle size of about 0.3 μm to about 2 μm.

3. The calcium carbonate according to claim 1, having an aggregate particle size of less than about 3 μm.

4. The calcium carbonate according to claim 1, having a Brass Einlehner abrasion value of between about 1 mg loss/100,000 rev. to about 5 mg loss/100,000 rev.

5. The calcium carbonate according to claim 1, having a Brass Einlehner abrasion value of between about 1 mg loss/100,000 rev. to about 2 mg loss/100,000 rev.

6. A dentifrice comprising the calcium carbonate of claim 1.

7. A dentifrice comprising from about 30 wt% to about 50 wt% of the calcium carbonate according of claim 1.

8. The dentifrice according to claim 7, wherein the dentifrice has a RDA of about 30 to about 100.

9. The dentifrice according to claim 7, wherein the dentifrice has a PCR of greater than about 80.

10. The dentifrice according to claim 7, wherein the dentifrice has a RDA of about 30 to about 100 and a PCR of greater than about 80.

11. The dentifrice according to claim 7, wherein the dentifrice has a viscosity of less than about 500,000 CPS.

12. A method for forming vaterite calcium carbonate comprising the steps of

(a) preparing a calcium chloride-monoethanolamine solution;

(b) introducing carbon dioxide into the calcium chloride-monoethanolamine solution to form spherical vaterite calcium carbonate by a precipitation reaction; and

(c) adding a stabilizing agent to the spherical vaterite calcium carbonate.

13. The method according to claim 12, wherein step (b) occurs two weeks after step (a).

14. The method according to claim 12, wherein the stabilizing agent is selected from the group comprising sodium polyphosphate and HEDP.

15. The method according to claim 12, wherein about 750ppm to about 5000 ppm of the stabilizing agent is added.

16. A method for forming stabilized vaterite calcium carbonate comprising the steps of:

forming vaterite calcium carbonate under high shear conditions; and

adding a stabilizing agent to the formed spherical vaterite calcium carbonate.

17. The method according to claim 16, wherein the stabilizing agent is selected from the group comprising sodium polyphosphate and HEDP.

18. The method according to claim 16 wherein about 750ppm to about 5000 ppm of the stabilizing agent is added.

19. The method of claim 16, wherein greater than about 750 ppm sodium polyphosphate is added

20. A dentifrice comprising the stabilized vaterite according to claim 16.